



## **Middle Class Without a Net Savings, Financial Fragility, and Preferences Over Social Insurance**

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**Middle Class without a Net:**  
**Savings, Financial Fragility and Preferences over Social Insurance\***

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# **Middle Class without a Net:**

## **Savings, Financial Fragility and Preferences over Social Insurance**

### **ABSTRACT**

In this paper, we show that it is crucial to distinguish between liquid and illiquid wealth in order to understand how voters form preferences towards social insurance. Many households are financially fragile despite having high incomes and wealth, because they hold little liquid savings. We hypothesize, and show empirically, that this implies that a substantial group of voters show strong support for social insurance policies despite being wealthy and having high incomes, because of their limited ability to self-insure through own savings in case of an income shock. Our empirical analysis is based on a novel dataset from Denmark, which combines administrative data with high-quality measures of individual financial assets and survey measures of political preferences. Using data for other countries from the European Social Survey, we find evidence that our results hold more generally and are not specific to the Danish context.

## **I. Introduction**

Social insurance and redistribution are defining features of the welfare state, and a vast literature in political economy investigates the individual-level determinants of social policy preferences. Recent work has emphasized the importance of economic self-interest, including portability of skills (Iversen and Soskice 2001), labor market risk (Rehm 2009), wealth holdings (Ansell 2014), and economic worries more generally (Hacker et al. 2013), for understanding political preference formation. However, the focus on formal social insurance arrangements is incomplete – and recognized as such: In an influential analysis of social insurance and redistribution, Moene and Wallerstein (2001, p. 871) note that “[t]heoretically, the largest gap in our approach is the absence of a private alternative to publicly provided insurance. We have concentrated on the loss of income, a risk that cannot be insured privately.” But private supplements and alternatives to social insurance of income risks do exist, partly because formal social insurance programs often offer only partial income replacement and, in the case of unemployment insurance, only for a limited time. Therefore, people’s reliance on formal social insurance is in practice widely supplemented by, and sometimes secondary to, informal self-insurance, of which the most important component is drawing on private savings (Gruber 2001).

Yet, the availability of private savings and credit market opportunities differ considerably across individuals. The middle class is now becoming more financially fragile (Lusardi et al. 2011) and heterogeneous (Atkinson and Brandolini 2011). Many households with medium or high incomes are increasingly characterized by limited savings and accumulated debts, which leaves them “no margin for error in their financial lives” (Sullivan et al. 2000, p. 250). Across industrialized countries, wealthy ‘hand-to-mouth’ households – households that have positive illiquid wealth, typically from housing equity, but little or no liquid savings – constitute between thirty and forty percent of the population (Kaplan et al. 2014). One consequence of this is that economic vulnerability, measured by a lack of access to economic buffers, is also common among middle-class and rich households and, thus, largely unrelated to current income. Following the

literature on the economics of consumption and savings we refer to people who are unable to access economic buffers to maintain current consumption as *liquidity constrained*.

In this paper, we examine if the presence of such liquidity constraints increases individual-level demand for social insurance and redistribution. Liquidity constraints is a core concept in economic theory, necessary to understand the link from current income to consumption. By introducing it into political science, the paper adds considerable nuance to the concepts of income, wealth and what it means to be “rich” in political science research. While existing research convincingly argues that perceived economic vulnerability matters for policy preferences (Hacker et al. 2013), we show that our conceptual unpacking of objective income and wealth measures are important for explaining people’s social policy preferences: Our key finding is that being liquidity constrained predicts support for increasing social insurance and redistribution, even among wealthy individuals. Liquidity constraints constitute a novel and under-theorized determinant of individual social policy preferences that cuts across the traditional fault line of class politics. Also, it is substantively relevant: In our data from Denmark, forty percent of the survey population is liquidity constrained, a number comparable to that found in the U.S. and other industrialized countries (Kaplan et al. 2014).

The welfare state has two distinct functions: redistribution, which serves to equalize the income distribution, and social insurance, which provides a financial cushion against misfortune. The classical accounts of the welfare state (e.g., Esping-Andersen 1990; Esping-Andersen and Korpi 1984; Korpi 1983) focused on redistribution and how the distribution of power resources – including, but not limited to, relative income and wealth – shaped welfare state trajectories. Focusing on individual-level preferences, Meltzer and Richard (1981) showed that citizens with a relatively low income are more likely to favor redistribution and support the welfare state than are the more well-to-do, and, recently, Ansell (2014) showed that rising housing wealth is associated with lower support for redistribution. A different strand of the welfare state literature has, instead, focused more on social insurance and how attitudes are shaped by risk coalitions (Baldwin 1990) based on relative vulnerability in the labor market (e.g., Cusack et al. 2006;

Estevez-Abe et al. 2001; Iversen and Soskice 2001; Moene and Wallerstein 2001, 2003; Rehm 2009, 2011) and economic worries (Hacker et al. 2013).

Our political economy approach combines the two dimensions of wealth and vulnerability and focuses on the ability to weather economic shocks. The argument has two parts: First, the middle class and the rich, despite being by definition wealthy and/or having high incomes, can be economically vulnerable. In part, this is because they have *pre-committed expenditures* that are costly to adjust, such as school payments, mortgages or general debt servicing (Warren and Tyagi 2003; Chetty and Szeidl 2007). Second, the impact of wealth on vulnerability critically depends on how liquid the wealth is: Illiquid wealth, including housing wealth, is at best an imperfect instrument for smoothing consumption when faced with adverse economic shocks. This means that in order to understand the relationship between economic resources and social policy preferences, we need to carefully distinguish not only income and wealth, but also the composition of wealth by its liquidity or, in other words, by its usefulness as short-term income insurance. Our core hypothesis is that liquidity constraints explain attitudes to social insurance for all levels of illiquid wealth: Despite being middle-class or rich by standard metrics, liquidity constrained households should share the attitudes of the poor on issues of social insurance policy.

Our primary analyses combine two types of data rarely available together: a large-scale survey of political attitudes and preferences combined with unusually rich and detailed administrative data containing information on liquid and illiquid savings, labor market history and demographics. The level of detail enables us to distinguish individuals along a number of important dimensions and to assess competing and complementary hypotheses in the political economy of social policy preference formation in a unified empirical framework. Our key findings obtain for different measures of liquidity constraints, including pre-existing bank debt and the price of borrowing. We show that our findings are robust to accounting for the main alternative explanations suggested by the recent political economy literature (all of which also find empirical support).

We extend the main analysis in two directions. First, we account for the fact that savings and liquidity constraints are not exogenously given at the individual level and may both

reflect future adverse circumstances beyond those captured by risks of unemployment, including the existence of social insurance itself (Engen and Gruber 2001) as well as more stable traits, including, e.g., risk aversion, impatience, or a preference for thrift. We utilize individual-level data on savings behavior more than a decade before the survey to assess whether current liquidity constraints reflect contemporaneous income shocks or more stable characteristics. Our results suggest that both sources of liquidity constraints are important, even if the latter seems to weigh more. As a second extension, we provide a first pass at generalizing our findings to a cross-country setting. This is important in order to provide external validity to the one-country study and, also, because all advanced economies have significant shares of liquidity constrained individuals. Despite different credit market structures and welfare state arrangements, we find – using data from the European Social Survey – that liquidity constraints predict social policy preferences across 22 countries.

To the best of our knowledge, this is the first paper to consider the political consequences of liquidity constraints, even if they have long been a key concept in economics. It is well documented, for example, that liquidity constraints exacerbate households' vulnerability to income and employment shocks: When households hold little liquid wealth or are unable to borrow, a negative income shock leads to falling consumption and living standards (e.g., Zeldes 1989). In the context of labor markets, recent evidence suggests that liquidity constraints tend to reduce the duration of job search for unemployed households (Card et al. 2007; Basten et al. 2014). Such results are consistent with the argument presented in this paper: liquidity constrained households have preferences for (increased) unemployment benefits, because such benefits allow them to sustain living standards in the event of job and income loss and, also, because they allow them more search time to find a job that matches their skills.

The remainder of the paper proceeds as follows. In the next section, we present the theory and the predictions that guide the empirical analyses. Section three presents the institutional context, and section four describes the data and our empirical approach. Section five presents the main results, with additional robustness analyses in the online appendix (OA), and section six

briefly introduces cross-country findings as well as our analysis of the relative importance of stable traits and idiosyncratic shocks for savings behavior and preference formation. The final section concludes and proposes avenues for future research.

## II. Theoretical Framework

The political economy literature on the formation of social policy preferences argues that individuals' preferred policies vary with their economic situation. This literature has focused almost exclusively on the *level* of economic determinants such as income and, to a lesser extent, wealth including housing and human capital. The *liquidity* of these economic determinants is an almost entirely neglected, but equally important, dimension of the economics of individual social policy preferences.<sup>1</sup> In this section we combine economic theories of consumption, savings, and insurance with the political economy of redistribution and social insurance to arrive at testable hypotheses linking different types of wealth and savings to individual social policy preferences.

The basic assumption of the canonical economic model of consumption and savings – the permanent income hypothesis (Friedman 1957) – is that people prefer a stable consumption flow to one that fluctuates. To maintain a constant standard of living, individuals therefore divide their lifetime resources evenly over time. This implies that a transitory drop in income should not translate into an equal drop in living standards. Instead, people cushion the shock by borrowing or by running down liquid assets such that living standards fall marginally for many periods rather than precipitously for a few periods. Yet, individuals who have limited liquid savings relative to income, or who face a high interest rate in the borrowing market, are liquidity constrained (Zeldes, 1989) and unable to cushion shocks and sustain consumption during periods of lower income. Because social insurance allows people who are liquidity constrained to realize a consumption path closer to their pre-shock level, we hypothesize that liquidity constrained households or individuals will favor unemployment protection, and social insurance in general. Individuals thus compensate

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<sup>1</sup> A notable exception is Iversen and Soskice (2001), who consider the liquidity of human capital, denoted skill specificity.



for a limited ability to self-insure by demanding increased social insurance. In that sense social insurance works as a substitute for private insurance.<sup>2</sup>

Even if it is an axiomatic assumption in intertemporal models of consumption that people dislike variation and prefer constant living standards, there is evidence that people's savings do not adequately prepare them for income shocks. Focusing on job risk, Gruber (2001) and Basten et al. (2016) find that while some households are adequately prepared, most are not. Consistent with this, Hacker et al. (2013) report considerable worries over the adequacy of savings among U.S. citizens. The inability to smooth consumption in the event of an income shock and financial worries is not (only) a result of low income and is not confined to the poor: liquidity constraints extend to the upper part of the income distribution in the form of limited savings and high credit costs.

To understand how one can be wealthy and financially vulnerable at the same time, it is important to distinguish between liquid and illiquid wealth. An individual's financial wealth consists of some assets that are liquid (e.g., cash and bank deposits) and some that are illiquid (e.g., real estate). Liquid assets are better suited than illiquid assets as a means of self-insurance against short-term shocks to income or employment, as illiquid assets can be traded only at a (sometimes substantial) transaction cost or at a considerable delay. Illiquid assets are therefore more appropriate for transferring wealth across the life-cycle (from working age to retirement, for example, the case considered by Ansell (2014)) than to mitigate the effects of temporary shocks.<sup>3</sup> Indeed, the main illiquid asset of most households, real estate, is rarely liquidated during unemployment (Chetty and Szeidl 2007). This suggests the existence of a group of "vulnerable

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<sup>2</sup> Private (liquid) savings is considered the most important alternative and supplement to social insurance (Gruber 2001), but supplementary private insurance, labor supply responses from other members of the household, and informal loans from family and friends can also contribute to weathering an adverse economic shock. The availability of some or all of these safety nets can affect attitudes towards social insurance. Here, we focus on private savings; see note 5 on supplementary private insurance.

<sup>3</sup> The cost of extracting illiquid wealth is often substantial relative to the income loss caused by temporary economic hardship, such as unemployment. The largest part of most households' illiquid wealth is pension wealth and home equity. For pensions, it is often very costly – or impossible if structured as annuities – to access these savings before retirement. Regarding housing wealth, extracting liquidity through home equity loans is associated with various fees and closing costs.

rich” – characterized by high incomes and substantial illiquid wealth, but little liquid wealth with which to weather shocks and smooth consumption. Because illiquid wealth is an imperfect substitute for liquid wealth as a means for short-term self-insurance, we hypothesize that liquidity constraints predict social policy preferences for all levels of illiquid wealth.

This hypothesis implies that self-interested support for the welfare state can extend into and beyond the middle class. It suggests a new fault line in welfare state politics between those who are able to self-insure and those who have to rely more on social insurance. Importantly, these groups are different from the familiar rich-poor dichotomy, which brings us to another point about the importance of distinguishing between liquid and illiquid wealth: whereas liquidity constraints are prevalent across the income distribution, illiquid wealth is essentially a proxy for income: high-income individuals tend also to be wealthy in terms of illiquid wealth. Thus, if one does not distinguish between liquid and illiquid assets, one will simply overlook that financial vulnerability can also characterize middle class and high-income individuals. In summary, the distinction between liquid and illiquid wealth is important in analyses of the political economy of social policy preferences both because liquid wealth serves an insurance purpose against short-term risk for which illiquid wealth compensates poorly, and because the distribution of liquidity constraints cuts across the traditional fault line of relative income, whereas the distribution of illiquid wealth follows more closely the traditional rich-poor divide.

While our main theoretical focus is on preferences over social insurance, these are in practice difficult to separate from preferences over redistribution. The reason is that the two functions of the welfare state often overlap in practice. The social insurance dimension of the welfare state serves as a safeguard against misfortune, and includes unemployment protection, health care, and disability benefits, while the redistribution dimension serves to equalize the income distribution through (progressive) taxation of earnings and assets. However, there is an element of insurance in redistribution (by, e.g., providing a lower bound beneath which living standards cannot fall, despite misfortune), and an element of redistribution in unemployment insurance (since it is often partly financed by progressive taxation and payments often are linked to pre-unemployment

earnings). As well, the two concepts are often employed interchangeably in analyses of social policy preferences.<sup>4</sup> In our empirical analysis, we therefore show that liquidity constraints predict attitudes to redistribution as well as to social insurance. We focus on results on social insurance in the main paper and present most results on redistribution in the online appendix.

### III. Context

We study the importance of liquidity constraints for social policy preferences in the context of Denmark. The welfare system in Denmark is considered to be comparatively generous (e.g., Kautto et al. 2001). The unemployment insurance system consists of a baseline means-tested social transfer that everyone is entitled to, and a higher transfer available to members of an unemployment insurance (UI) fund. Membership of the UI fund is voluntary. Two-thirds of the costs are covered by the members who pay a flat fee. The rest is financed by general taxes, which means that the UI system includes an element of redistribution. Eligibility for unemployment benefits from the UI fund requires at least one year's membership and no less than six months of full-time employment over a period of three years. Benefits amount to 90 percent of pre-unemployment wages up to a threshold of about USD 35,000 per year, roughly equivalent to the median income, and is capped beyond that. The maximum duration of unemployment insurance is two years, after which the worker can shift to the lower means-tested social transfer with an unlimited duration.<sup>5</sup>

The share of liquidity constrained individuals in our data, defined by liquid assets relative to income, is around 40 percent. This is similar to the numbers estimated for a number of advanced industrialized countries, including Australia, Canada, France, Germany, Italy, and Spain, the UK, and the U.S. (Kaplan et al. 2014). For the average Danish household, most of its wealth is

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<sup>4</sup> To illustrate, Rehm (2009) links occupational unemployment risk to redistributive preferences, whereas Iversen and Soskice (2001) link liquid human capital to preferences for social insurance.

<sup>5</sup> Approximately ten percent of people with UI coverage have private supplementary UI schemes (Dagpengekommisionen 2015). However, no individual-level data on such schemes exist. Available industry data suggests that such supplementary insurance does not seem to be systematically related to income, as a large share of supplementary insurees are covered through collective agreements for low- and medium wage earners (Dagpengekommisionen 2015, p. 23).

held in housing, as Denmark has a rate of homeownership of around 56 percent (Statistics Denmark). This is similar to many advanced countries. This composition of wealth, and the fact that homeownership is often financed through high monthly mortgages that deplete the stock of liquid wealth and are costly to adjust, create a vulnerable middle class: they may be wealthy in terms of total assets and income but are poor in terms of liquid savings.

## **IV. Data and Estimation Approach**

### **Data sources**

For the empirical analysis, we combine two unique data sources. To obtain information about policy preferences, we use data from a large survey of around 6,000 respondents each year over the years 2010-2013. The respondents are randomly drawn from the Danish working-age population with some labor market participation in the period 1998-2004. We use the observation of the first interview and exclude people who are permanently out of the labor force, yielding around 8,000 unique respondents.<sup>6</sup> To obtain information about personal finances, labor market conditions, and demographics, we combine the survey data with uniquely detailed data from Statistics Denmark covering the entire Danish population back to 2000. This is linked to the survey data via a personal identification number assigned to all Danish residents.<sup>7</sup> The administrative data from Statistics Denmark is reported from third parties; for example, information on earnings is reported by employers; information on transfer income is reported by government agencies; information about the value of assets and liabilities is reported directly by banks and other financial institutions.<sup>8</sup> This means both that our variables are generally very close to the “true” values and

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<sup>6</sup> The interviews were carried out by a professional survey firm. The AAPOR R1 response rates were 0.439, 0.345, 0.657, and 0.615 for each of the four years 2010-2013, respectively. We include the respondent in the year in which he/she is interviewed for the first time, and thereby only use unique observations of respondents. This gives us 4,962 respondents in 2010, 1,313 in 2011, 871 in 2012, and 889 in 2013; a total of 8,035 respondents. All regressions include a dummy for the year of the survey.

<sup>7</sup> The final data available for research is deidentified. We access the data through a secure connection to servers located at Statistics Denmark. This is approved by the Danish Data Protection Agency.

<sup>8</sup> This is non-trivial. Hariri and Lassen (2017) document systematic measurement error when survey respondents self-report income. The structure of the measurement error on self-reported income tends to attenuate the relevant regression coefficients.

that there are essentially no missing items. Summary statistics are available in Table A.24 in the OA.

### **Outcome variables**

We focus on two outcomes: preferences for unemployment insurance and for redistribution. Regarding unemployment insurance, respondents are asked whether they think that the state should do more to support those who become unemployed, and they can answer on a three-point scale: “less than today”, “unchanged”, or “more than today”. For redistribution preferences, the respondents are asked to place themselves on a scale from one to five, where one is “the government should do everything it can to raise living standards of the poor” and five is “it is not the government’s responsibility, people should take care of themselves”. We normalize both outcomes to run on a scale from zero to one such that coefficients are comparable across outcomes.

## **Liquidity constraints and other explanatory variables**

People are liquidity constrained if they are unable to access liquid funds on short notice. Liquidity constraints result in an inability to smooth consumption and sustain living standards during a temporary income shock. Conceptually, we are interested in the extent to which people can sustain their current living standard if, for whatever reason, they did not receive their paycheck. We therefore consider liquid assets relative to income and use as our main independent variable a measure of liquidity constraints that is standard in the economics literature: an individual is considered liquidity constrained if the sum of her liquid assets is less than one and a half month of disposable income (e.g., Zeldes 1989; Johnson et al. 2006; Leth-Petersen 2010). The value of liquid assets is equal to the sum of bank deposits, the value of stocks, and the value of bonds. It is measured on December 31 and reported by banks to tax authorities for tax purposes. None of our findings hinge on the specific operationalization of liquidity constraints, and we present results below and in the OA for a range of alternative measures for liquidity constraints, including different cutoffs (at the sum of liquid assets less than one month and two months of disposable income, respectively), the fraction of years liquidity constrained since year 2000 (which captures a more permanent status), and a measure of the individual marginal cost of liquidity raised in the credit market (Kreiner et al. 2019).<sup>9</sup>

As controls, we include determinants of social policy preferences known from the literature. We show robustness to inclusion of different detailed measures of income, and as our main income control variable, we use a measure of ‘permanent income’ equal to the individual’s average annual gross income since 2000.<sup>10</sup> We furthermore include the individual’s perceived unemployment risk, a measure of skill specificity that captures transferability of skills across jobs (the measure SI from Iversen and Soskice (2001)), and a measure of illiquid wealth. Our measure

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<sup>9</sup> Section II.I in the OA explains in more detail how we calculated the marginal cost of obtaining liquidity for each individual included in the survey. Figure A.1 in the OA documents that a low level of liquid assets is strongly and significantly associated with a high marginal cost of credit. This suggests that both measures capture an inability to smooth consumption during times of temporary economic hardship.

<sup>10</sup> Variables for income, assets, and debt are censored at the 1<sup>st</sup> and 99<sup>th</sup> percentiles to ensure that a few influential outliers do not drive the results. All results are unchanged in a non-censored sample.

of illiquid wealth focuses on home equity, which is defined by the public assessment of the value of all owned homes minus the total value of mortgage debt.<sup>11</sup> All these variables are based on information from the administrative registers, except for the perceived unemployment risk, which is based on a survey question where the respondent is asked how likely it is that she will experience a period of unemployment within the next year. This measure is a strong predictor of the realized unemployment next year (which we observe in the administrative data) and is highly correlated with the history of unemployment and unemployment rates within the respondent's industry and occupation (Alt, Barfort and Lassen 2017; Hendren 2017).

As additional controls we include information from the administrative registers about demographics (age, marital status, children, immigrant status, gender), current labor market status, membership of a UI fund, and years of education. We also include a measure of whether respondents consider success to be mostly due to hard work or luck and connections. This variable captures respondents' beliefs about fairness and deservingness, which has been shown to be a strong determinant of social policy preferences (e.g., Alesina and Angeletos 2005).

## Estimation

To examine the association between liquidity constraints and the outcomes of interest, we estimate the following equation using ordinary least squares (OLS):

$$Y_i = \alpha + \delta C_i + \mathbf{X}_i \beta + \varepsilon_i \quad (1)$$

Here,  $Y_i$  represents the social policy preferences of individual  $i$ ,  $C_i$  is the dummy for being liquidity constrained for  $i$ , and  $\mathbf{X}$  is a vector of controls. In some of the specifications, we extend the model with an interaction term to examine the interplay between liquid and illiquid wealth. In the

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<sup>11</sup> Since only the net value, the home equity, of the house can be extracted for consumption, we include this rather than total housing wealth. The Danish mortgage market is considered to be low on regulation, at the same level as mortgage markets in the U.S. and the U.K. according to the cross-country ratings in Davis and Zhu (2011) and Chiuri and Jappelli (2010).

penultimate section, we implement a two-step procedure to split up the more persistent and the more transitory part, respectively, of liquidity constraints. Both alternative models will be explained in greater detail. Robust standard errors are reported throughout.<sup>12</sup>

## **V. Results**

### **Income, assets, and liquidity**

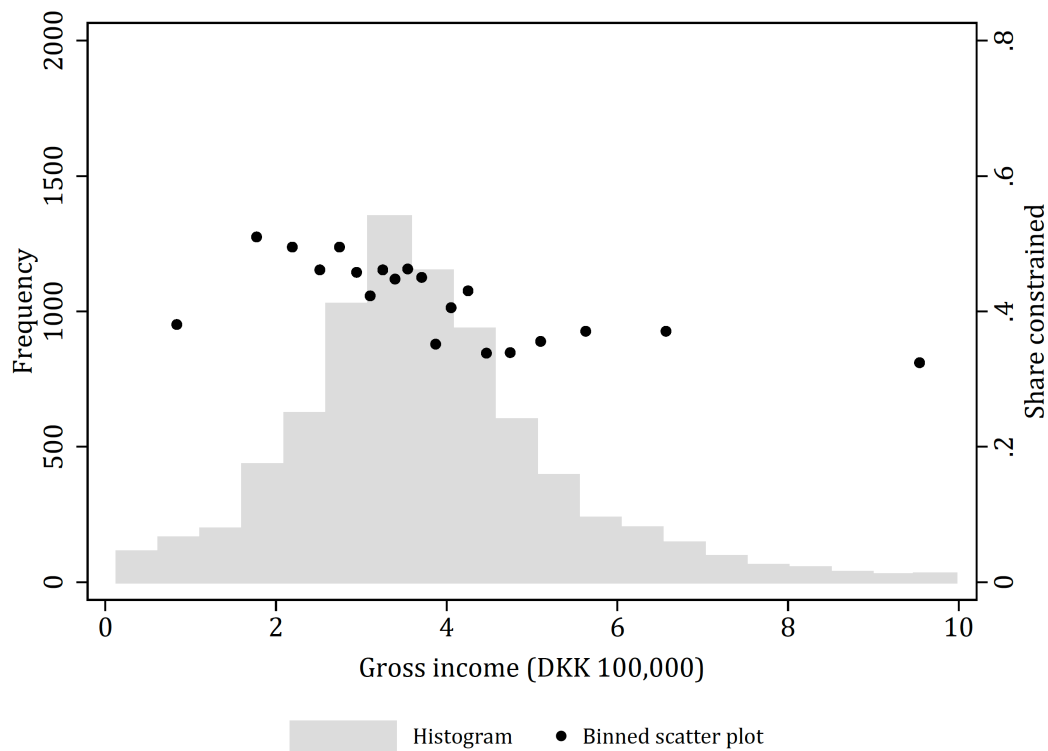
A central reason for introducing the concept of liquidity constraints to political economy is that it is distinct from measures of income. Liquidity constraints are prevalent across the income distribution. This is documented in Figure 1, which shows a binned scatter plot of the share of liquidity-constrained individuals in bins of gross income. While there is a weak downward trend, the share of liquidity constrained individuals stays high at around 40-50 percent for most of the income distribution.

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<sup>12</sup> To maintain the qualitative nature of the data, we also estimated ordered logit models. This leaves all results unchanged – see Section III in the OA (Tables A.16 and A.17).



**Figure 1. Liquidity and income**

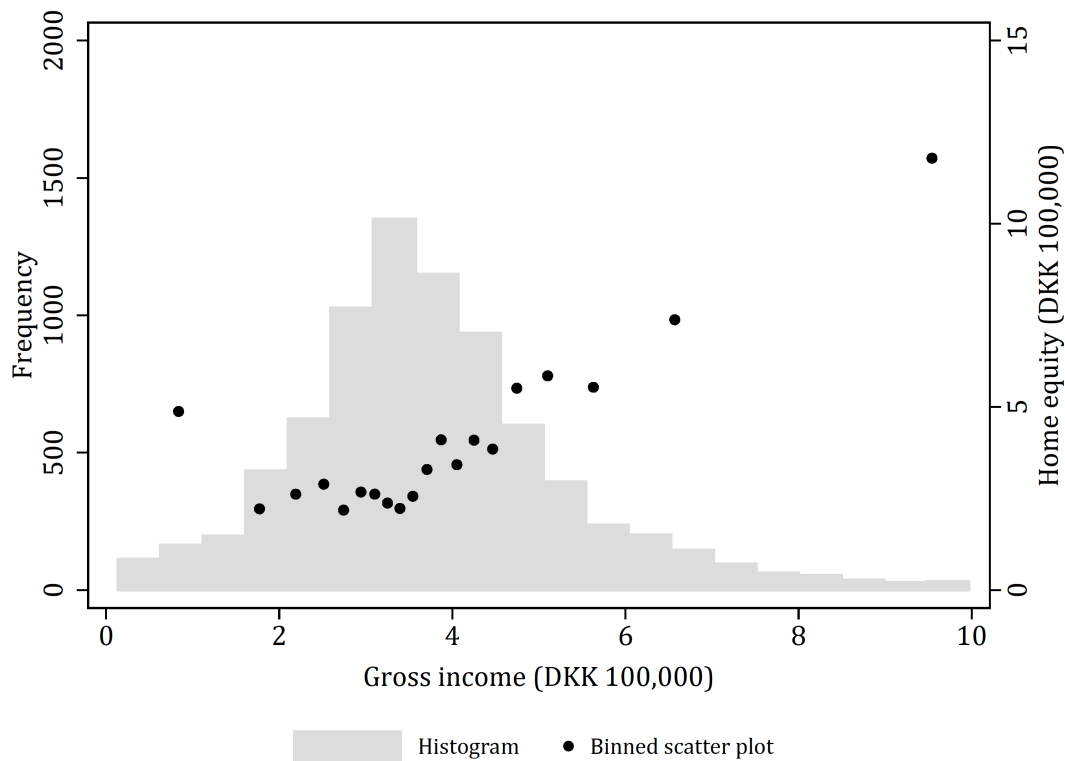


*Notes.* Danish administrative data, survey data, and own calculations. Based on our survey sample of 8,035 respondents. Liquidity constrained is defined by a dummy for liquid assets of less than 1.5 months of disposable income. Gross income is recorded annually.

This pattern is partly due to the fact that much consumption is “pre-committed” and difficult to adjust from period to period (Warren and Tyagi 2003; Chetty and Szeidl 2007). This type of consumption includes rent, mortgages, other servicing of loans, utility bills, membership fees, tuition, and alimony expenditures. These expenditures must be incurred regularly unless one pays a, sometimes substantial, transaction cost to modify the existing commitments, and they are usually increasing in income: For instance, people with higher incomes buy more expensive houses and face higher mortgages. This means that also in the upper part of the income distribution, many households deplete their holdings of liquid assets each month and would not be able to maintain their living standard for even short periods of time if they temporarily stopped getting their paycheck. Figure 1 is consistent with the cross-country findings of Kaplan et al. (2014) and with Lusardi et al.’s (2011) finding that a sizable proportion of the American middle class considers itself to be financially fragile.

In contrast, illiquid wealth, which clearly constitutes the bulk of overall wealth, is highly correlated with income. This is documented in Figure 2. For larger income shocks and for consumption smoothing over a longer time horizon, from working age to retirement for instance, high-income individuals therefore have more options: if an income shock becomes sufficiently large, they can adjust a high level of committed expenditures by downsizing or taking out a home equity loan. In the regression analysis below, we consider separately the distinct effects of liquid and illiquid wealth on social policy preferences; for now, note from Figures 1 and 2 that the distinction between liquid and illiquid wealth matters for how people are divided across the income distribution. Liquidity constraints cut across income groups, while illiquid wealth follows a traditional rich-poor categorization.

**Figure 2. Home equity and income**



*Notes.* Danish administrative data, survey data, and own calculations. Based on home owners from our survey sample of 8,035 respondents. Gross income is recorded annually, home equity is defined as the total value of all owned houses minus total outstanding debt.

## **Liquidity constraints and social policy preferences**

Table 1 reports coefficients from OLS regressions of preferences for unemployment insurance on liquidity constraints, corresponding to equation (1). The first column shows the unconditional association between liquidity constraints and social policy preferences, while control variables and various measures of income are included in the columns that follow.

Throughout, the coefficient on the indicator for being liquidity constrained is significant and substantial. This holds unconditionally and after controlling for various measures of income, detailed data on the individuals' labor market situation, and demographics: an individual who is liquidity constrained is three percentage points more likely to support a more generous unemployment insurance system than is a non-constrained individual who is similar in terms of covariates. To illustrate the substantive relevance of liquidity constraints for understanding social policy preferences, the coefficient is similar in size to those estimated for women and respondents outside the labor force. Table 1 thus confirms that private savings and public social insurance are substitutes. As expected, permanent income is significantly negative throughout the analysis: individuals with higher incomes are less welcoming of governments programs and interventions. This shows that the coefficient on liquidity constraints does not capture (nor is it captured by) a more traditional rich-versus-poor explanation of welfare state preferences.

**Table 1. Liquidity constraints and social insurance preferences**

	(1)	(2)	(3)	(4)	(5)
VARIABLES	More UI	More UI	More UI	More UI	More UI
Liquidity constrained	0.027*** (0.006)	0.032*** (0.006)	0.031*** (0.006)	0.030*** (0.006)	0.048*** (0.015)
Gross income (DKK 100,000)			-0.012*** (0.002)		
Permanent income (DKK 100,000)				-0.017*** (0.002)	-0.016*** (0.002)
Permanent income*Liquidity constrained					-0.005 (0.004)
<b>Controls</b>					
<i><b>Labor Market</b></i>					
Unemployed		0.059*** (0.017)	0.044** (0.017)	0.047*** (0.017)	0.046*** (0.017)
Self-employed		-0.071*** (0.012)	-0.077*** (0.012)	-0.070*** (0.012)	-0.070*** (0.012)
Outside the labor force		0.045*** (0.013)	0.027** (0.014)	0.030** (0.014)	0.030** (0.014)
Unemp insurance		0.036*** (0.008)	0.036*** (0.008)	0.035*** (0.008)	0.035*** (0.008)
<i><b>Demographics</b></i>					
Age		0.002*** (0.000)	0.002*** (0.000)	0.003*** (0.000)	0.003*** (0.000)
Woman		0.044*** (0.006)	0.033*** (0.006)	0.027*** (0.006)	0.027*** (0.006)
Single		0.036*** (0.008)	0.035*** (0.008)	0.035*** (0.008)	0.035*** (0.008)
Immigrant		0.020 (0.017)	0.014 (0.017)	0.012 (0.017)	0.011 (0.017)
Children		-0.012* (0.007)	-0.007 (0.007)	-0.003 (0.007)	-0.003 (0.007)
Short educ		-0.013 (0.008)	-0.010 (0.008)	-0.009 (0.008)	-0.009 (0.008)
Medium educ		0.004 (0.009)	0.013 (0.009)	0.015 (0.009)	0.015 (0.009)
Long educ		-0.012 (0.011)	0.011 (0.011)	0.014 (0.011)	0.015 (0.011)
<i><b>Attitudinal</b></i>					
Success due to effort		-0.052*** (0.006)	-0.050*** (0.006)	-0.049*** (0.006)	-0.049*** (0.006)
Observations	8,035	8,035	8,035	8,035	8,035
R <sup>2</sup>	0.003	0.047	0.052	0.054	0.054

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on a dummy for being liquidity constrained and the controls shown. All models include a constant term and dummies for the survey years (not reported to save space). Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

Similar conclusions obtain for redistributive preferences, presented in Table A.1. The point estimate for liquidity constraints is consistently significant, but smaller in size than for social insurance. Even if the difference in coefficient magnitude is not significant, it is worth noting. Theoretically, we expect liquidity constraints to shape demand for social insurance. We expect liquidity constraints to predict redistributive preferences only because redistribution also contains an element of insurance. Tables 1 and A.1 show that liquidity constraints are more strongly correlated with preferences for social insurance than for redistribution, and we show below that alternative measures of liquidity constraints (the marginal cost of borrowing and the existence of bank debt) are strongly associated with demand for social insurance but uncorrelated with redistributive preferences. This is consistent with the asset model from Iversen and Soskice (2001) wherein the *level* of an economic asset determines preferences for redistribution, while its *liquidity* determines preferences for social insurance. Iversen and Soskice focus on human capital, but the results in Tables 1 and A.1 (and most clearly in Table 3 below where we use alternative measures of liquidity constraints) suggest that the theory may also apply for financial wealth in that liquidity constraints are more strongly associated with attitudes to social insurance than to redistribution.

Comparing the coefficients on the control variables in Tables 1 and A.1 also suggest a meaningful distinction between the redistributive and the insurance functions of the welfare state. Respondents who are at risk economically are generally in favor of social insurance: respondents who are unemployed, outside the labor force, members of a UI fund, or single have strong preferences over the generosity of the UI system, but do not have strong views on redistributive policies. Conversely, the level of education is correlated with redistributive preferences, but not with preferences for social insurance. This is also consistent with Iversen and Soskice (2001).

Finally, the rightmost columns show results for the interaction of income and being liquidity constrained. Since the replacement rate is lower for high-income individuals, due to the cap on unemployment benefits, they would have less reason to support the existing UI system. However, the survey question asked individuals if they think more should be done to help those becoming unemployed, and this could conceivably include extending coverage and replacement

rates. The lack of significance of the interaction term supports this latter interpretation and is consistent with our main argument that social insurance is important also for high income earners.

### **Competing explanations for social policy preferences: Liquid wealth, illiquid wealth, and labor market risk**

We now examine whether the association between liquidity constraints and social policy preferences changes when the model is extended to include home equity (Ansell 2014), skill specificity (Iversen and Soskice 2001), and perceived unemployment risk (Rehm 2016). Each additional variable is included one at a time. First in a simple model that only includes the liquidity constraint-dummy and the new variable, then in a more complete model that includes the full set of controls from Table 1 and, lastly, in a model that includes all controls and the three new determinants. Table 2 reports the results for social insurance preferences, and Table A.2 shows results for preferences over redistribution.

**Table 2. The effects of liquidity constraints, wealth and labor market risk on social insurance preferences**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained	0.020*** (0.006)	0.028*** (0.006)	0.027*** (0.006)	0.030*** (0.006)	0.026*** (0.006)	0.030*** (0.006)	0.028*** (0.006)
Permanent income (DKK 100,000)		-0.016*** (0.002)		-0.017*** (0.002)		-0.016*** (0.002)	-0.015*** (0.002)
Home equity (DKK 100,000)	-0.0018*** (0.000)	-0.001*** (0.000)					-0.001*** (0.000)
Skill Specificity			0.000 (0.000)	0.001 (0.000)			0.001** (0.000)
Unemployment risk (%)					0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R <sup>2</sup>	0.007	0.055	0.003	0.054	0.010	0.057	0.058

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls not reported are the same as in Table 1. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

The coefficient on the dummy for liquidity constraints remains significant and substantial across specifications. Compared to the results in Table 1, the estimated association remains unchanged when the other important determinants of social policy preferences are controlled for. This confirms that liquidity status is an important input into the process of social policy preference formation, and that this is not captured by income, illiquid wealth, labor market risk, or skill composition. Note that the three determinants that were added to the model all have the expected sign and are significantly related to preferences for unemployment insurance. Comparing the coefficients in Table 2 and A.2 shows that skill specificity and perceived unemployment risk are more strongly associated with attitudes to social insurance than redistribution, whereas the opposite holds for home equity. We also interacted liquidity constraints with the risk of unemployment to see if people who are more at risk in the labor market are more supportive of social insurance when they are less able to self-insure, but found no significant effects (see Tables A.13-A.15 in the OA for different measures of unemployment risk and different measures of liquidity constraints, which all yield the same conclusion).<sup>13</sup>

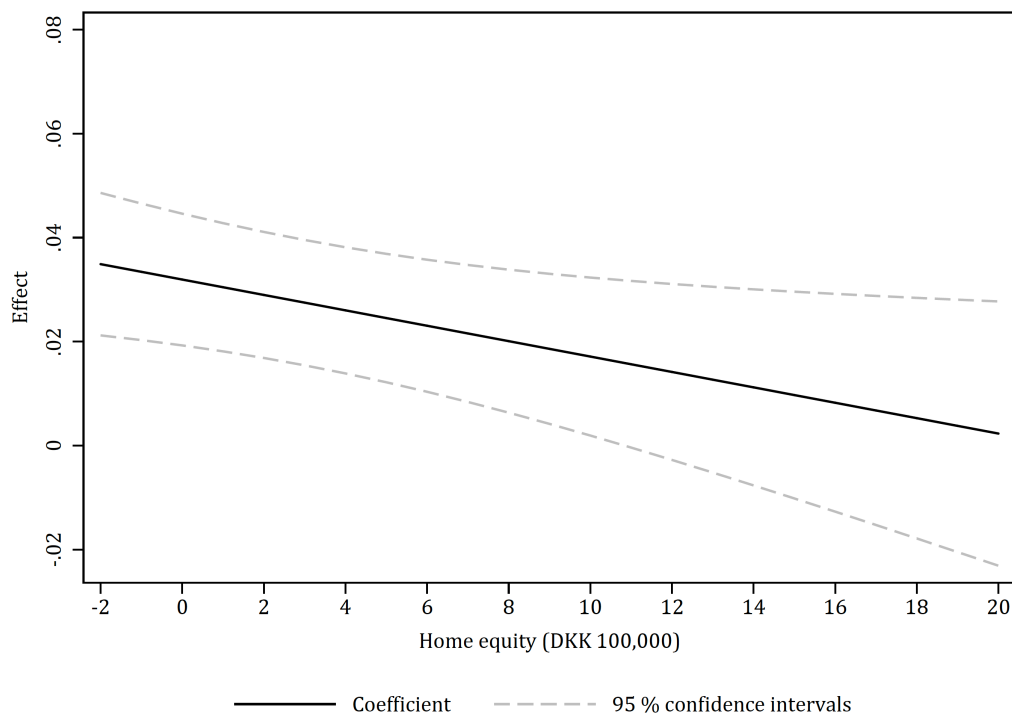
Thus far, we have identified the distinct effects of having limited access to liquid assets and illiquid wealth in the form of home equity. To understand in more detail the relationship between liquid and illiquid wealth in shaping individual social policy preferences, we examine the interaction between the two in a model that is otherwise identical to column (7), Table 2. Figure 3 shows the result graphically, and Tables A.18 and A.19 in the OA show the corresponding regression tables.

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<sup>13</sup> The insignificant interaction suggests that liquidity constrained respondents demand higher unemployment insurance irrespective of their (perceived or occupational) risk of unemployment. What might explain this? It is conceivable that respondents in high-risk occupations are relatively less risk averse, and respondents in low-risk occupations relatively more risk averse. Among respondents in high-risk occupations, liquidity constraints might result from personal traits (such as limited risk aversion). Among respondents in low-risk occupations, liquidity constraints might come from adverse shocks. While somewhat speculative, such an explanation – where occupational choice results primarily from stable personality traits, and liquidity constraints result from a combination of personality traits and adverse shocks – is consistent with the finding that liquidity constraints are associated with preferences for increased social insurance for all levels of unemployment risk.



**Figure 3. Effect of liquidity constraints on support for UI over values of home equity**



*Notes.* Danish administrative data, survey data, and own calculations. Based on our survey sample of 8,035 respondents. The results from the regression used to construct the graph are shown in the OA, Table A.18 and A.19.

Consistent with expectations, Figure 3 shows that liquidity constraints are significantly associated with demand for social insurance for almost all levels of illiquid assets. This confirms that, as a means of self-insurance against short-term risks, illiquid wealth is an imperfect substitute for liquid wealth. The coefficient on liquidity constraints remains sizable and significant at the 95-percent level until the rightmost part of the illiquid wealth distribution (around the 90<sup>th</sup> percentile). While home equity may serve as a buffer against large and persistent shocks, it does not fulfill the need for insurance that comes from a lack of liquid wealth holdings. As noted above, the reason for this is that the cost of accessing illiquid wealth is often substantial relative to the income loss caused by temporary economic hardship. However, if such costs are constant regardless of the size of, say, a secondary mortgage, or the gains from liquidity are higher relative to the costs for high-wealth households, the costs of transforming illiquid wealth into liquid wealth will be relatively smaller

for more wealthy individuals. This would produce a relationship between liquidity constraints, illiquid wealth and support for unemployment insurance as the one shown in figure 3.<sup>14</sup>

Finally, Table 3 presents the full specifications of Table 2 for three alternative measures of liquidity constraints. The first two columns use the marginal interest rate, that is, the interest rate on the borrowing market currently faced by survey respondents (see OA II.I for details on how this has been measured). This constitutes a proxy, and presumably lower bound, for the cost of additional credit. Columns three and four use an indicator for having bank debt, and columns five and six show results for the fractions of years over a decade preceding the survey that respondents were liquidity constrained. Across measures, we find strong effects of the lack of economic buffers on preferences for social insurance, but less clear results for attitudes towards redistribution. One possible reason is that exposure on the borrowing market is a strong signal of lack of insurance possibilities for both the rich and the poor, two groups who have different preferences over redistribution. The findings underscore, again, that social insurance and redistribution are distinct functions of the welfare state, and that survey respondents are able to distinguish meaningfully between them.<sup>15</sup>

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<sup>14</sup> In turn, this suggests that financial market regulation determining the costs of accessing illiquid savings will affect support for unemployment insurance differentially across the wealth distribution. We leave this comparative hypothesis for future research.

<sup>15</sup> Full results for all alternative liquidity constraints measures, including alternative time horizons against which liquid savings are measured, are available as Tables A.3-A.12 in the Online Appendix.

**Table 3. Alternative measures of liquidity constraints**

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	More UI	More Redistribution	More UI	More Redistribution	More UI	More Redistribution
Borrowing market interest rate	0.002*** (0.0004)	0.001 (0.0004)				
Bank debt			0.020*** (0.007)	0.004 (0.007)		
Share years liquidity constrained					0.066*** (0.009)	0.049*** (0.009)
Permanent income (DKK 100,000)	-0.015*** (0.002)	-0.013*** (0.002)	-0.016*** (0.002)	-0.013*** (0.002)	-0.015*** (0.002)	-0.012*** (0.002)
Home equity (DKK 100,000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001** (0.000)	-0.001*** (0.000)
Skill Specificity	0.001** (0.000)	-0.001 (0.001)	0.001** (0.000)	-0.001 (0.001)	0.001** (0.000)	-0.001 (0.001)
Unemployment risk (%)	0.001*** (0.000)	0.0002** (0.000)	0.001*** (0.000)	0.0002* (0.000)	0.001*** (0.000)	0.0002* (0.000)
<b>Controls</b>						
<i>Labor Market</i>	✓	✓	✓	✓	✓	✓
<i>Demographics</i>	✓	✓	✓	✓	✓	✓
<i>Attitudinal</i>	✓	✓	✓	✓	✓	✓
Observations	7,005	7,005	8,035	8,035	8,035	8,035
R <sup>2</sup>	0.0551	0.0708	0.0583	0.0732	0.0031	0.0732

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance and redistribution on three different measures of liquidity constraints and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls not reported are the same as in Table 1 and 2. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

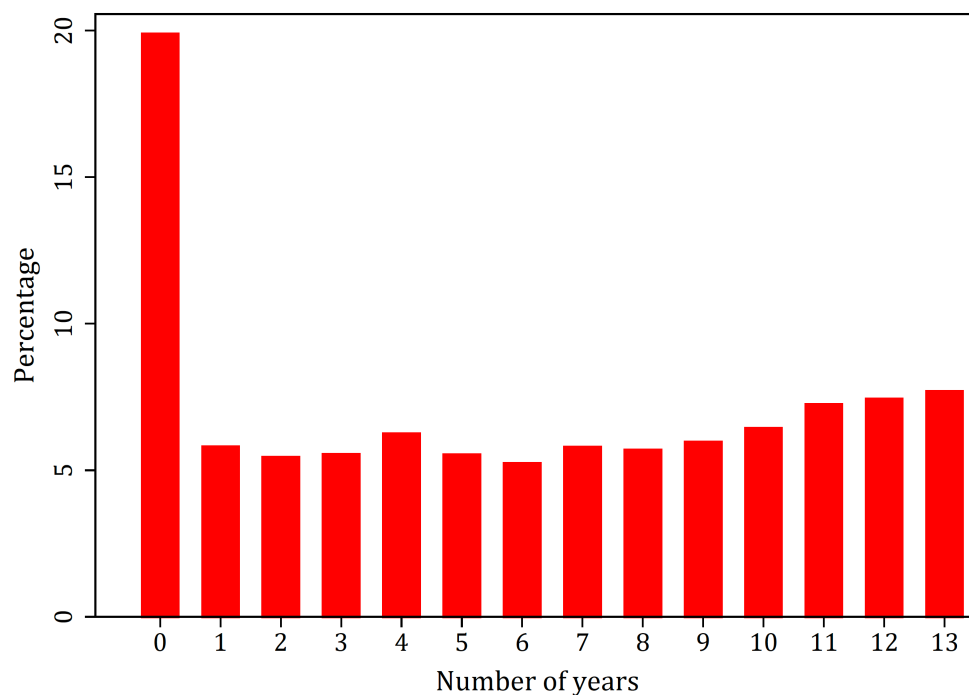
## **VI. Further Perspectives**

In this section, we explore the relative importance of temporary shocks and more permanent characteristics in explaining when people are liquidity constrained and what that means for our results. We, also, briefly address the generalizability of our findings in a cross-section of countries.

The presence of liquidity constraints is not randomly distributed across individuals. Liquidity constraints may reflect unanticipated economic shocks or individual traits such as impatience, limited risk aversion or personality. To see if liquidity constraints and social policy preferences are jointly determined by individual traits, we control for measures of personality and spending temperament. Tables A.20 and A.21 include an indicator for respondents who report finding it difficult to control expenses; Tables A.22 and A.23 control for Big Five personality traits using a ten-item scale. Conditioning on personality does not, however, change the size or the significance of the coefficient on the dummy for being liquidity constrained.

As an alternative approach, we try to disentangle the relative importance of stable traits and idiosyncratic shocks in determining the existence of liquidity constraints and, through liquidity constraints, social policy preferences. We begin by looking at historical patterns of savings behavior at the individual level. Figure 4 shows the distribution of the number of years an individual in our sample was liquidity constrained over the period 2000-2012. The figure reveals large variation at the individual level – ranging from some that are never constrained to some that are always constrained. This is consistent with liquidity constraints sometimes being forced upon people by shocks such as unemployment and sometimes resulting from individual characteristics that are more stable. For many people liquidity constraints is a relatively persistent or recurrent condition.

**Figure 4. The number of years people have been liquidity constrained 2000-2012**



*Notes.* Danish administrative data, based on our survey sample of 8,035 individuals. Liquidity constraints are defined by a dummy for liquid assets by the end of the year of less than 1.5 months of disposable (after-tax) income.

In Table 4, we try to determine the relative importance of liquidity constraints arising from shocks and persistent characteristics, respectively, for political attitudes. The idea is that if liquidity constraints in the years of the surveys, 2010-2013, are correlated with financial characteristics going back more than a decade, this suggests that liquidity constraints are at least partly the result of factors that are too persistent to be explained by what is usually thought of as a transitory shock.<sup>16</sup>

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<sup>16</sup> In empirical analyses of political preferences, persistent traits are usually controlled away using individual fixed effects. Here, including individual fixed effects would yield identification solely from the individuals who from 2010-2013 switch from being financially unconstrained to being liquidity constrained or vice versa (since the fixed-effect specification controls away all individuals who are constantly (or never) liquidity constrained). At the same time, there is very little temporal variation in social policy preferences. For these reasons, we address the key concern that personality (or, indeed, idiosyncratic shocks) might jointly determine the existence of liquidity constraints and social policy preferences, not through individual fixed effects but the analysis presented in Table 4.

**Table 4. Persistence and shocks in the effect of liquidity constraints**

	(1)	(2)	(3)
VARIABLES	Liquidity constrained	More UI	More Redistribution
Liquidity constrained (predicted)		0.081*** (0.028)	0.050* (0.027)
Liquidity constrained (residual)		0.021** (0.008)	0.010 (0.008)
Liquidity constrained in 2000	0.280*** (0.014)		
Permanent income (DKK 100,000)	-0.012** (0.005)	-0.017*** (0.003)	-0.008*** (0.003)
Home equity (DKK 100,000)	-0.004*** (0.001)	-0.001* (0.001)	-0.001 (0.001)
Skill Specificity	-0.000 (0.000)	0.001 (0.000)	-0.001** (0.000)
Unemployment risk (%)	-0.000 (0.000)	0.0004*** (0.0001)	0.0003** (0.0001)
<b>Controls</b>			
<i>Labor Market</i>	✓	✓	✓
<i>Demographics</i>	✓	✓	✓
<i>Attitudinal</i>	✓	✓	✓
Observations	7,951	7,951	7,951
R <sup>2</sup>	0.159	0.060	0.074

*Notes.* The table reports coefficients from OLS regressions. The set of labor market controls, demographic controls, and attitudinal controls not reported are the same as in Table 1-3. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

In column (1), we regress the presence of liquidity constraints in the years of the survey on an indicator for being liquidity constrained in 2000 and our usual battery of controls; this shows that being liquidity constrained a decade before the survey is a strong predictor of being liquidity constrained at the time of the survey. We use these estimates to predict current liquidity constraints. In the next step, we use predicted constraints as a regressor in analyses of social policy preferences alongside the residual variation in the condition of being liquidity constrained; this residual variation reflects the influence of individual level economic shocks not captured by the more permanent traits identified in the analysis in column (1). This addresses the specific challenge to identification that idiosyncratic shocks might jointly determine the condition of being constrained as well as political

attitudes. In columns (2) and (3) of Table 4, the condition of being liquidity constrained predicted from the presence of liquidity constraints in 2000 is significant and the estimate is larger in magnitude than in the basic estimation presented in the preceding tables. These results suggest that fixed or very persistent factors and traits that govern savings behavior play an important role in the condition of being liquidity constrained and, through liquidity constraints, also in shaping people's political attitudes and voting behavior (see also Duch and Rueda 2016). At the same time, the transient component in the condition of being liquidity constrained is also significant and confirms the importance of current economic circumstances in explaining liquidity constraints and, through these, individual social policy preferences.

We turn now to the generalizability of our findings. Across countries, substantial shares of the population are liquidity constrained, including groups with home equity (Kaplan et al., 2014). It is natural, therefore, to ask if our detailed findings from Denmark generalize to a broader group of countries. As described in section III above, the level of social insurance provided by the government in Denmark is comparatively high. *A priori* one would expect that the imperfections in the private market would be more important in settings with less generous welfare programs: The lower the level of public insurance, the more important is the ability to self-insure.

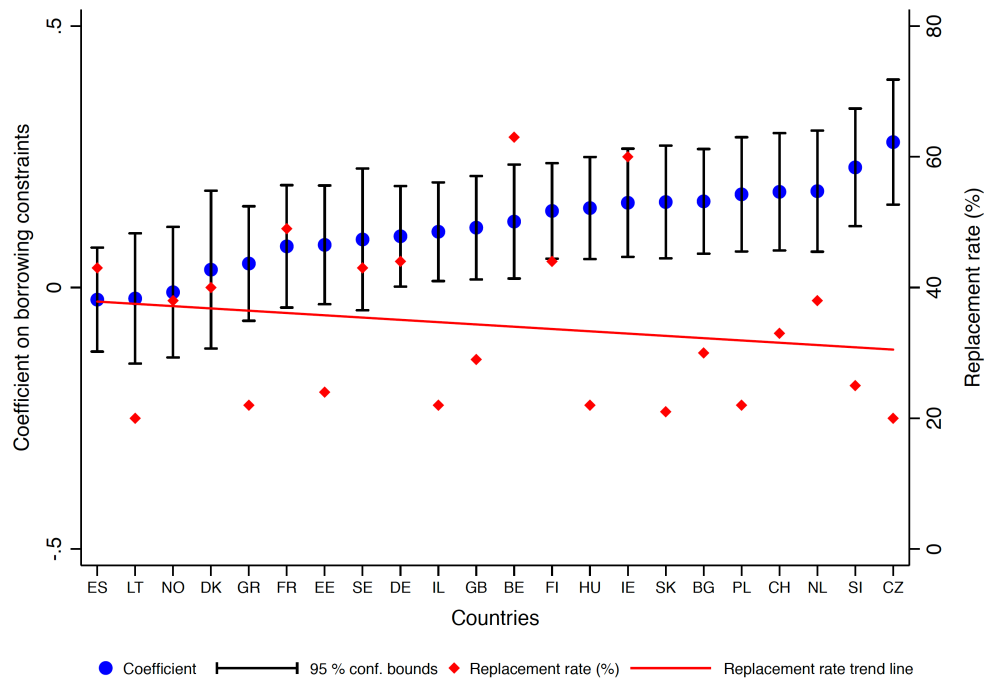
While we do not have cross-country data with the same level of detail that we have for Denmark, we use the most suitable proxy for liquidity constraints and a measure of social policy preferences from the European Social Survey. We use round 5, from 2010, and define a person to be liquidity constrained if the respondent reports finding it difficult or quite difficult “to borrow money to make ends meet.”<sup>17</sup> As the outcome variable, we use a question on whether “the government should take measures to reduce differences in income levels”, which runs on a 5-point scale from “strongly agree” to “strongly disagree”. For each country separately, we regress the outcome variable on our dummy for being liquidity constrained and a set of control variables (see notes to Figure 5). The country-specific coefficients on liquidity constraints are shown in Figure 5 together with confidence

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<sup>17</sup> Theoretically, this captures the same underlying concept as the marginal cost of liquidity, used as an alternative measure of liquidity constraints in the Danish data in Table 3.

bounds (left axis). At the same time, we plot the country-specific compensation rate as a measure of the generosity of the national UI system (right axis).

**Figure 5. Liquidity constraints and social policy preferences across countries**



*Notes.* Country-specific coefficients are estimated on data from the European Social Survey, round 5, 2010. The data is weighted by design weights, and all regressions include the following control variables: income decile fixed effects, gender, age, single, household size, education-level fixed effects, unemployment last week, unemployment last year, and self-employment. Data on replacement rates is from the OECD's Tax-Benefit Models (used measure: NRR excluding SA and HB (AW)).

For 19 out of the 22 countries, the coefficient is positive, and for 14 countries it is significantly different from zero at the 95 percent level. As with the Danish data, the correlation is substantial: For most countries, the coefficient is larger than the coefficient on the gender dummy and, remarkably, larger than the coefficient on the dummy for having been unemployed within the last week before the interview. The coefficient estimated for Denmark is below the median, confirming our presumption that liquidity constraints would have a smaller effect here relative to many other developed countries. The countries are ranked according to the estimated coefficient, and the trend line for unemployment compensation rates indicates that it is in fact the case that liquidity constraints matter more in countries with a less generous welfare system: if misfortune hits and the level of social protection is



limited, the ability to self-insure becomes all the more important.<sup>18</sup> This suggests that the results from Denmark, a generous Nordic welfare state, may in fact represent something of a lower bound on the role of liquidity constraints, and that our results are likely to hold *a fortiori* in countries with less generous welfare systems (including the U.S. which is not a part of the ESS study). A plausible corollary of this finding is that the number of liquidity-constrained households should vary in tandem with the generosity of the welfare state: In less generous welfare states, to substitute for the limited availability of social insurance, there will be more informal self-insurance and, thus, fewer liquidity constrained individuals or households. And vice versa in the more generous welfare states. This also suggests the existence of two different self-sustaining political equilibria in welfare politics: one with generous social insurance and many liquidity constrained, and one with less generous social insurance and few liquidity constrained. While we do not, at present, have the data to test this hypothesis, it provides an interesting avenue for future research.

## VII. Conclusion

Individual attitudes towards social insurance and redistribution depend on income, perceived unemployment risk, the possibilities of finding new employment – and the ability to self-insure. While many people can draw on savings to sustain levels of consumption in the event of negative economic shocks, large shares of the population, including many middle-class and rich individuals, have small or non-existent economic buffers. This, we argue, has implications for the political economy of social insurance and redistribution.

Our main contribution is to show theoretically and empirically that being liquidity constrained, defined as lacking liquid savings and/or being unable to borrow in the credit market in order to maintain one's standard of living, is associated with higher support for social insurance and income maintenance. While high-income citizens typically have larger savings in absolute terms, social insurance is about maintaining one's standard of living, often dictated in the short term by

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<sup>18</sup> These findings mirror the results in Gingrich and Ansell (2012, 1631), who find that the correlation between risk and the demand for social spending is higher in less generous countries and in countries where welfare benefits are dependent on employment (as in the U.S. but contrary to Denmark).

committed consumption. This means that the relevant metric for assessing the adequacy of savings is the availability of funds relative to disposable income. At the same time, not all types of wealth are equally suited for alleviating temporary economic hardship. The middle and upper classes may, by definition, be wealthy, but often this wealth is illiquid and cannot, or only at great cost, be used to smooth consumption across economic shocks. For everyone except the very rich, illiquid wealth does not substitute for a lack of liquid savings, and liquidity constraints continue to be a predictor of support for unemployment insurance across standard divisions of political conflict often cast in terms of rich versus poor.

Throughout, our data allow us to control for other recent explanations for individual support for social insurance and redistribution, including skill specificity, unemployment risk and homeownership. We find support for all of these, and see the literature moving towards a broad understanding that individual economic circumstances in credit and labor markets are important determinants of social policy preferences. We concur with Hacker et al. (2013) that “too often the discussion of the economic roots of policy attitudes has declared—based on, at best, limited measures of dynamic economic experiences—that economic factors are largely irrelevant.” Indeed, the findings presented here underscore the need for improved measures of individual economic circumstances – as illustrated by the important distinction between illiquid and liquid wealth.

Our analyses are based on very detailed and accurate data from Denmark. These data allow for empirical investigations that would be difficult to carry out in most other countries. Our results can serve as a benchmark for analyses of the political implications of a fragile middle class in other countries and contexts, but the one-country nature of our primary data does not allow for analyses of the consequences of differences in credit markets or in traditions of informal insurance arrangements. In our case, a straightforward cross-country analysis based on proximate survey measures from the European Social Survey confirmed our main finding across a broad group of countries. However, to the best of our knowledge existing cross-country data sets rarely, if ever, combine detailed information on political and attitudinal variables with data on household balance sheets in the form of assets, debt, and interest rates. While the former are standard instruments in

value and social surveys, the latter are typically confined to focused economic surveys. Combining insights from Iversen and Soskice (2001), Rehm (2009, 2016), Hacker et al. (2013), Ansell (2014), and the present paper would suggest the need for a novel cross-country data collection effort that integrates such information. This should be a priority in order to improve our understanding of the links between credit markets and financial regulation, patterns of labor market risk, informal safety nets, formal social insurance systems, and political institutions across industrialized countries.

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**Middle Class without a Net:**

**Savings, Financial Fragility and Preferences over Social Insurance**

Online Appendix

(For online publication only)



## Part I: Main results with preferences for redistribution as dependent variable

**Table A.1: Liquidity constraints and preferences for redistribution**

VARIABLES	(1) More Redistribution	(2) More Redistribution	(3) More Redistribution	(4) More Redistribution	(5) More Redistribution
Liquidity constrained	0.0251*** (0.0060)	0.0294*** (0.0060)	0.0286*** (0.0060)	0.0274*** (0.0060)	0.0392*** (0.0141)
Gross income (DKK 100,000)			-0.0099*** (0.0018)		
Permanent income (DKK 100,000)				-0.0144*** (0.0021)	-0.0133*** (0.0024)
Permanent income*Liquidity constrained					-0.0033 (0.0036)
<b>Controls</b>					
<i>Labor Market</i>		✓	✓	✓	✓
<i>Demographics</i>		✓	✓	✓	✓
<i>Attitudinal</i>		✓	✓	✓	✓
Observations	8,035	8,035	8,035	8,035	8,035
R-squared	0.0022	0.0660	0.0694	0.0709	0.0710

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.2: The effects of liquidity constraints, wealth and labor market risk on preferences for redistribution**

VARIABLES	(1) More Redistribution	(2) More Redistribution	(3) More Redistribution	(4) More Redistribution	(5) More Redistribution	(6) More Redistribution	(7) More Redistribution
Liquidity constrained	0.0180*** (0.0061)	0.0246*** (0.0061)	0.0250*** (0.0060)	0.0274*** (0.0060)	0.0246*** (0.0060)	0.0275*** (0.0060)	0.0247*** (0.0061)
Permanent income (DKK 100,000)		-0.0129*** (0.0021)		-0.0142*** (0.0021)		-0.0141*** (0.0021)	-0.0125*** (0.0021)
Home equity (DKK 100,000)	-0.0020*** (0.0003)	-0.0012*** (0.0003)					-0.0012*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002* (0.0001)	0.0002* (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0077	0.0727	0.0028	0.0712	0.0031	0.0713	0.0732

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

## Part II: Main results with alternative measures of liquidity constraints

**Table A.3: Table 2 with liquidity constraints defined with respect to a one-month horizon**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained 1m	0.0148** (0.0066)	0.0213*** (0.0065)	0.0208*** (0.0065)	0.0237*** (0.0064)	0.0195*** (0.0065)	0.0241*** (0.0064)	0.0219*** (0.0064)
Permanent income (DKK 100,000)		-0.0162*** (0.0021)		-0.0177*** (0.0021)		-0.0166*** (0.0021)	-0.0155*** (0.0021)
Home equity (DKK 100,000)	-0.0019*** (0.0003)	-0.0011*** (0.0003)					-0.0011*** (0.0003)
Skill Specificity			0.0002 (0.0005)	0.0007 (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0008*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0064	0.0540	0.0013	0.0529	0.0086	0.0558	0.0573

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.4 Table A.2 with liquidity constraints defined with respect to a one-month horizon**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Liquidity constrained 1m	0.0175*** (0.0065)	0.0238*** (0.0064)	0.0237*** (0.0064)	0.0265*** (0.0063)	0.0234*** (0.0064)	0.0267*** (0.0063)	0.0240*** (0.0064)
Permanent income (DKK 100,000)		-0.0131*** (0.0021)		-0.0144*** (0.0021)		-0.0143*** (0.0021)	-0.0126*** (0.0021)
Home equity (DKK 100,000)	-0.0020*** (0.0003)	-0.0012*** (0.0003)					-0.0012*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002* (0.0001)	0.0002* (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0075	0.0724	0.0024	0.0708	0.0027	0.0709	0.0730

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.5: Table 2 with liquidity constraints defined with respect to a two-month horizon**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained 2m	0.0216*** (0.0061)	0.0289*** (0.0061)	0.0286*** (0.0060)	0.0314*** (0.0060)	0.0268*** (0.0060)	0.0314*** (0.0060)	0.0291*** (0.0061)
Permanent income (DKK 100,000)		-0.0159*** (0.0021)		-0.0172*** (0.0021)		-0.0162*** (0.0021)	-0.0152*** (0.0021)
Home equity (DKK 100,000)	-0.0018*** (0.0003)	-0.0010*** (0.0003)					-0.0010*** (0.0003)
Skill Specificity			0.0003 (0.0005)	0.0007 (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0007*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0073	0.0554	0.0029	0.0545	0.0099	0.0573	0.0586

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.6 Table A.2 with liquidity constraints defined with respect to a two-month horizon**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Liquidity constrained 2m	0.0166*** (0.0060)	0.0227*** (0.0060)	0.0240*** (0.0059)	0.0256*** (0.0060)	0.0235*** (0.0059)	0.0257*** (0.0060)	0.0227*** (0.0060)
Permanent income (DKK 100,000)		-0.0128*** (0.0021)		-0.0141*** (0.0021)		-0.0140*** (0.0021)	-0.0124*** (0.0021)
Home equity (DKK 100,000)	-0.0020*** (0.0003)	-0.0012*** (0.0003)					-0.0012*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002* (0.0001)	0.0002* (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0076	0.0724	0.0027	0.0709	0.0030	0.0710	0.0730

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels..

**Table A.7: Table 2 with fraction of years liquidity constrained**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Fraction of years constrained	0.0547*** (0.0088)	0.0655*** (0.0087)	0.0654*** (0.0085)	0.0694*** (0.0085)	0.0631*** (0.0085)	0.0699*** (0.0085)	0.0663*** (0.0087)
Permanent income (DKK 100,000)		-0.0159*** (0.0021)		-0.0169*** (0.0021)		-0.0159*** (0.0021)	-0.0152*** (0.0021)
Home equity (DKK 100,000)	-0.0016*** (0.0003)	-0.0007** (0.0003)					-0.0007** (0.0003)
Skill Specificity			0.0003 (0.0005)	0.0007* (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0007*** (0.0001)	0.0006*** (0.0001)	0.0005*** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0105	0.0593	0.0073	0.0589	0.0142	0.0619	0.0626

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on the fraction of years since 2000 where the respondent was liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.8: Table A.2 with fraction of years liquidity constrained**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Fraction of years constrained	0.0345*** (0.0087)	0.0485*** (0.0086)	0.0468*** (0.0085)	0.0538*** (0.0084)	0.0463*** (0.0084)	0.0542*** (0.0084)	0.0488*** (0.0086)
Permanent income (DKK 100,000)		-0.0129*** (0.0021)		-0.0139*** (0.0021)		-0.0138*** (0.0021)	-0.0124*** (0.0021)
Home equity (DKK 100,000)	-0.0019*** (0.0003)	-0.0010*** (0.0003)					-0.0010*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002* (0.0001)	0.0002* (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0086	0.0744	0.0045	0.0734	0.0048	0.0736	0.0750

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on the fraction of years since 2000 where the respondent was liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.



**Table A.9: Table 2 with a dummy for positive bank debt**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Bank debt	0.0022 (0.0071)	0.0197*** (0.0071)	0.0044 (0.0071)	0.0210*** (0.0071)	0.0052 (0.0071)	0.0216*** (0.0070)	0.0202*** (0.0071)
Permanent income (DKK 100,000)		-0.0167*** (0.0021)		-0.0182*** (0.0021)		-0.0172*** (0.0021)	-0.0159*** (0.0021)
Home equity (DKK 100,000)	-0.0020*** (0.0003)	-0.0011*** (0.0003)					-0.0011*** (0.0003)
Skill Specificity			0.0002 (0.0005)	0.0006 (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0008*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0058	0.0537	0.0001	0.0523	0.0075	0.0552	0.0569

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to social insurance on a dummy for positive bank debt and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.10: Table A.2 with a dummy for positive bank debt**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Bank debt	-0.0103 (0.0070)	0.0040 (0.0068)	-0.0077 (0.0070)	0.0056 (0.0068)	-0.0076 (0.0070)	0.0058 (0.0068)	0.0043 (0.0068)
Permanent income (DKK 100,000)		-0.0132*** (0.0021)		-0.0148*** (0.0021)		-0.0147*** (0.0021)	-0.0128*** (0.0021)
Home equity (DKK 100,000)	-0.0021*** (0.0003)	-0.0014*** (0.0003)					-0.0013*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002* (0.0001)	0.0002* (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0069	0.0708	0.0008	0.0688	0.0012	0.0689	0.0714

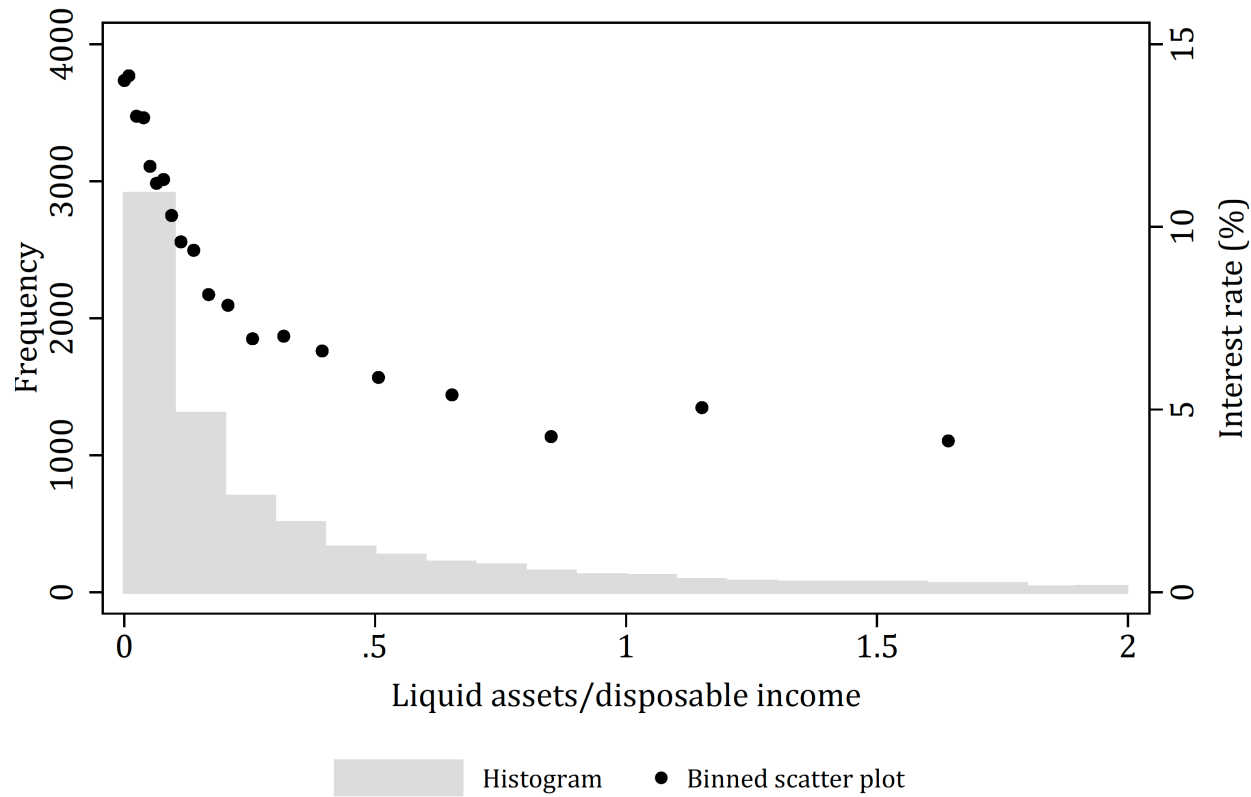
*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on on a dummy for positive bank debt and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

## **Part II.I: Measuring liquidity constraints as the marginal cost of liquidity**

Marginal interest rates were computed for each person in our sample using administrative data from the Danish tax authorities on every deposit and loan account held by the persons in our sample. Following Kreiner et al. (2019), we calculated individual, account-specific interest rates as annual interest payments on loan  $i$  relative to the average debt on loan  $i$  over the year. The marginal interest rate for each person was determined as the highest account-specific interest rate from a loan if the person has at least one loan account. If the person only has deposit accounts, the marginal interest rate was given as the smallest loan-specific interest rate. The idea is that if a person has loan accounts, the marginal cost of liquidity is determined by the highest interest rate, whereas the marginal cost of liquidity is determined by the account with the lowest interest rate when the person only has deposit accounts (since this reflects the marginal opportunity cost of liquid funds).

Whether we measure liquidity constraints as limited access to liquid funds or the cost of credit, they capture the same underlying idea – the inability to smooth consumption or self-insure during times of temporary economic hardship. Figure A.1 below shows a local polynomial smooth of the marginal interest rate against the level of liquid assets relative to disposable income. The figure shows a strong and highly significant relation between our two measures of liquidity constraints; a low level of liquid assets relative to disposable income is associated with a high marginal interest rate.

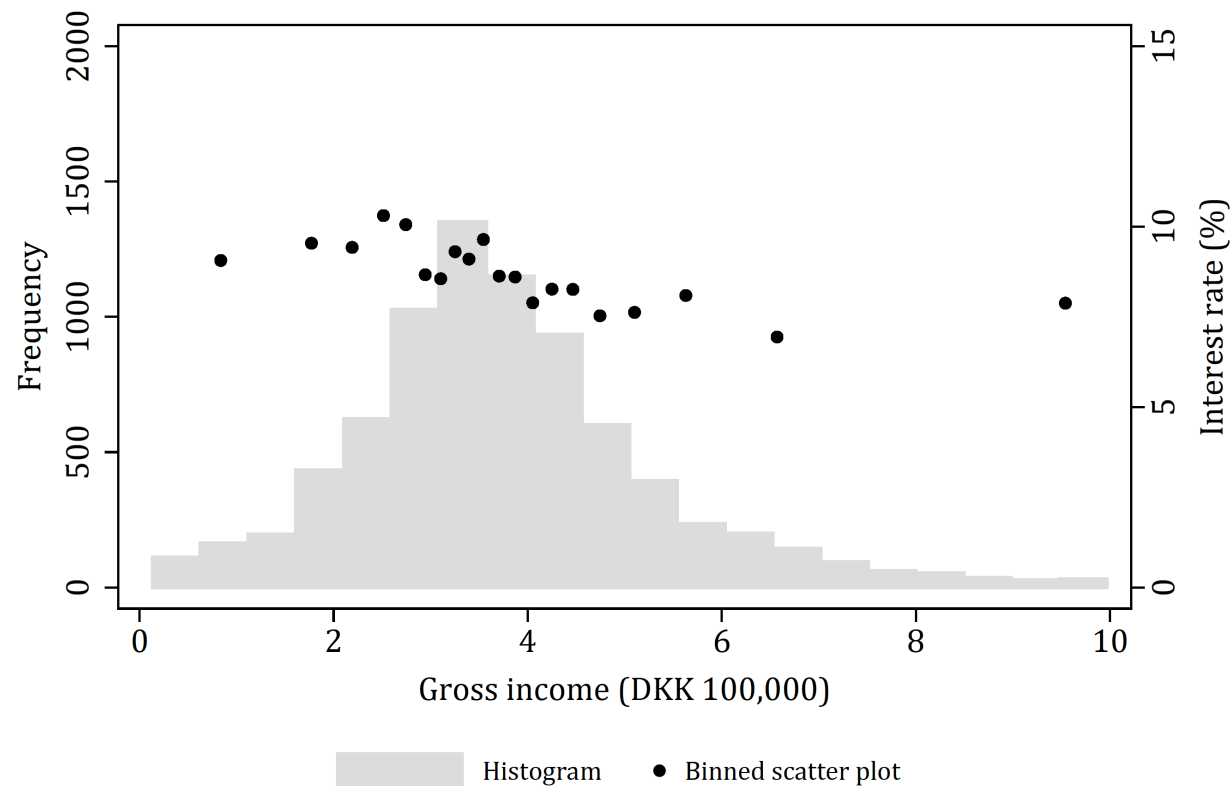
**Figure A.1: The association between the marginal cost of liquidity and holdings of liquid assets**



*Notes.* Danish administrative data, survey data, and own calculations. Based on our survey sample of 8,035 respondents.

Figure A.2 below shows that the marginal cost of liquidity, like the condition of being liquidity constrained, is prevalent across the income distribution.

**Figure A.2: Figure 1 with liquidity constraints measured as the marginal cost of liquidity**



*Notes.* Danish administrative data, survey data, and own calculations. Based on our survey sample of 8,035 respondents.

**Table A.11: Table 2 with liquidity constraints measured as the marginal interest rate**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Interest rate (%)	0.0020*** (0.0004)	0.0024*** (0.0004)	0.0022*** (0.0004)	0.0026*** (0.0004)	0.0022*** (0.0004)	0.0026*** (0.0004)	0.0024*** (0.0004)
Permanent income (DKK 100,000)		-0.0159*** (0.0022)		-0.0171*** (0.0022)		-0.0160*** (0.0022)	-0.0151*** (0.0022)
Home equity (DKK 100,000)	-0.0017*** (0.0003)	-0.0008*** (0.0003)					-0.0008*** (0.0003)
Skill Specificity			0.0002 (0.0005)	0.0007 (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0007*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	7,005	7,005	7,005	7,005	7,005	7,005	7,005
R-squared	0.0083	0.0519	0.0041	0.0512	0.0111	0.0540	0.0551

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to social insurance on the marginal interest rate available to respondents and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.12: Table A.2 with liquidity constraints measured as the marginal interest rate**

VARIABLES	(1) More Redistribution	(2) More Redistribution	(3) More Redistribution	(4) More Redistribution	(5) More Redistribution	(6) More Redistribution	(7) More Redistribution
Interest rate (%)	0.0000 (0.0004)	0.0005 (0.0004)	0.0004 (0.0004)	0.0007 (0.0004)	0.0004 (0.0004)	0.0007 (0.0004)	0.0005 (0.0004)
Permanent income (DKK 100,000)		-0.0136*** (0.0023)		-0.0150*** (0.0023)		-0.0148*** (0.0023)	-0.0131*** (0.0023)
Home equity (DKK 100,000)	-0.0021*** (0.0003)	-0.0013*** (0.0003)					-0.0012*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003*** (0.0001)	0.0002** (0.0001)	0.0002** (0.0001)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	7,005	7,005	7,005	7,005	7,005	7,005	7,005
R-squared	0.0069	0.0700	0.0009	0.0683	0.0012	0.0686	0.0708

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to redistribution on the marginal interest rate available to respondents and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels

**Table A.13: Interaction between liquidity constraints and labor market risk**

VARIABLES	(1) More UI	(2) More UI	(3) More Redistribution	(4) More Redistribution
Liquidity constrained	0.0255*** (0.0070)	0.0282*** (0.0070)	0.0218*** (0.0069)	0.0218*** (0.0069)
Unemployment risk (%)	0.0008*** (0.0001)	0.0005*** (0.0001)	0.0002 (0.0001)	0.0001 (0.0001)
Unemployment risk x Liquidity constrained	-0.0000 (0.0002)	-0.0000 (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)
Permanent income (DKK 100,000)		-0.0153*** (0.0021)		-0.0125*** (0.0021)
Home equity (DKK 100,000)		-0.0010*** (0.0003)		-0.0012*** (0.0003)
Skill Specificity		0.0007** (0.0003)		-0.0007 (0.0006)
<b>Controls</b>				
<i>Labor Market</i>		✓		✓
<i>Demographics</i>		✓		✓
<i>Attitudinal</i>		✓		✓
Observations	8,035	8,035	8,035	8,035
R-squared	0.0097	0.0583	0.0032	0.0733

Notes. The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance and redistribution on a dummy for being liquidity constrained, the interaction, and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.



**Table A.14: Additional interactions between liquidity constraints and occupational labor market risk – for varying measures of liquidity constraints**

VARIABLES	(1) More UI	(2) More UI	(3) More UI	(4) More UI
Liquidity Constrained	0.023** (0.010)			
Liq. Constrained x Occupational risk	0.001 (0.003)			
Borrowing Market Interest Rate		0.002*** (0.001)		
Interest Rate x Occupational risk		0.000 (0.000)		
Bank Debt			0.007 (0.012)	
Bank Debt x Occupational risk			0.004 (0.003)	
Fraction Past Years Liq. Constrained				0.052*** (0.014)
Fraction Years Constrained x Occupational risk				0.004 (0.003)
Permanent Income (DKK 100,000)	-0.015*** (0.002)	-0.015*** (0.002)	-0.016*** (0.002)	-0.015*** (0.002)
Home Equity (DKK 100,000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001** (0.000)
Skill Specificity	0.001** (0.000)	0.001* (0.000)	0.001** (0.000)	0.001* (0.000)
Occupational risk	0.002 (0.002)	0.002 (0.002)	-0.000 (0.003)	0.001 (0.002)
<b>Controls</b>				
<i>Labor Market</i>	✓	✓	✓	✓
<i>Demographics</i>	✓	✓	✓	✓
<i>Attitudinal</i>	✓	✓	✓	✓
Observations	8,035	7,005	8,035	8,035
R-squared	0.056	0.053	0.055	0.060

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on different measures of liquidity constraints, interacted with labor market risk. Labor market risk is defined as the unemployment rate in the respondent's occupation (occupational groups defined at the ISCO code 2-digit level). The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.15: Additional interactions between liquidity constraints and perceived labor market risk – for varying measures of liquidity constraints**

VARIABLES	(1) More UI	(2) More UI	(3) More UI	(4) More UI
Liquidity Constrained	0.028*** (0.007)			
Liq. Constrained x Unemployment risk	-0.000 (0.000)			
Borrowing Market Interest Rate		0.002*** (0.000)		
Interest Rate x Unemployment risk		0.000 (0.000)		
Bank Debt			0.014* (0.008)	
Bank Debt x Unemployment risk			0.000 (0.000)	
Fraction Past Years Liq. Constrained				0.065*** (0.010)
Fraction Years Constrained x Unemployment risk				0.000 (0.000)
Permanent Income (DKK 100,000)	-0.015*** (0.002)	-0.015*** (0.002)	-0.016*** (0.002)	-0.015*** (0.002)
Home Equity (DKK 100,000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001** (0.000)
Skill Specificity	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)	0.001** (0.000)
Unemployment risk	0.001*** (0.000)	0.000** (0.000)	0.000 (0.000)	0.001*** (0.000)
<b>Controls</b>				
<i>Labor Market</i>	✓	✓	✓	✓
<i>Demographics</i>	✓	✓	✓	✓
<i>Attitudinal</i>	✓	✓	✓	✓
Observations	8,035	7,005	8,035	8,035
R-squared	0.056	0.053	0.055	0.060

*Notes.* The table reports coefficients from OLS regressions of respondents' attitudes to unemployment insurance on different measures of liquidity constraints, interacted with labor market risk (using the variable for perceived labor market risk described in section IV of the paper). The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

### Part III: Main results estimated with ordered logit instead of least squares

**Table A.16: Table 2 estimated with ordered logit**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained	0.1638*** (0.0475)	0.2303*** (0.0494)	0.2171*** (0.0467)	0.2511*** (0.0490)	0.2049*** (0.0469)	0.2522*** (0.0491)	0.2322*** (0.0495)
Permanent income (DKK 100,000)		-0.1360*** (0.0180)		-0.1473*** (0.0180)		-0.1391*** (0.0180)	-0.1305*** (0.0180)
Home equity (DKK 100,000)	-0.0151*** (0.0024)	-0.0088*** (0.0026)					-0.0089*** (0.0026)
Skill Specificity			0.0019 (0.0037)	0.0054* (0.0031)			0.0057** (0.0025)
Unemployment risk (%)					0.0058*** (0.0008)	0.0042*** (0.0009)	0.0042*** (0.0009)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	-	-	-	-	-	-	-

*Notes.* The table reports coefficients from ordered logit regressions of respondents' attitudes to unemployment insurance on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.17: Table A.2 estimated with ordered logit**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Liquidity constrained	0.1319*** (0.0422)	0.1826*** (0.0437)	0.1807*** (0.0415)	0.2036*** (0.0433)	0.1774*** (0.0415)	0.2048*** (0.0433)	0.1836*** (0.0437)
Permanent income (DKK 100,000)		-0.0967*** (0.0150)		-0.1056*** (0.0150)		-0.1043*** (0.0150)	-0.0939*** (0.0151)
Home equity (DKK 100,000)	-0.0137*** (0.0020)	-0.0089*** (0.0022)					-0.0087*** (0.0022)
Skill Specificity			-0.0086 (0.0060)	-0.0056 (0.0054)			-0.0050 (0.0068)
Unemployment risk (%)					0.0021*** (0.0007)	0.0015* (0.0008)	0.0015* (0.0008)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	-	-	-	-	-	-	-

*Notes.* The table reports coefficients from ordered logit regressions of respondents' attitudes to redistribution on a dummy for being liquidity constrained and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

## Part IV: The interaction between liquid and illiquid wealth

**Table A.18: Interaction between liquidity constraints and home equity**

VARIABLES	(1)	(2)	(3)	(4)
	More UI	More UI	More Redistribution	More Redistribution
<b><i>Liquid and illiquid wealth</i></b>				
Liquidity constrained	0.0257*** (0.0065)	0.0319*** (0.0065)	0.0200*** (0.0064)	0.0257*** (0.0064)
Home equity (DKK 100,000)	-0.0014*** (0.0003)	-0.0007** (0.0003)	-0.0018*** (0.0003)	-0.0011*** (0.0003)
Home equity x constrained	-0.0019*** (0.0007)	-0.0015** (0.0007)	-0.0007 (0.0007)	-0.0004 (0.0007)
Permanent income (DKK 100,000)		-0.0152*** (0.0021)		-0.0124*** (0.0021)
Skill Specificity		0.0006** (0.0003)		-0.0007 (0.0006)
Unemployment risk (%)		0.0005*** (0.0001)		0.0002* (0.0001)
<b>Controls</b>				
<b><i>Labor Market</i></b>		✓		✓
<b><i>Demographics</i></b>		✓		✓
<b><i>Attitudinal</i></b>		✓		✓
Observations	8,035	8,035	8,035	8,035
R-squared	0.0080	0.0589	0.0078	0.0733

*Notes.* The table reports coefficients from OLS regressions of attitudes to social insurance and redistribution on a dummy for being liquidity constrained, the interaction, and the controls shown. The set of labor market controls, demographic controls, and attitudinal controls are the same as in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.19: Partial association between liquidity constraints and preferences for social insurance across percentiles of home equity**

More UI						
	p50		p60		p70	
Home equity (DKK 100,000)	0.173		1.784		3.720	
Estimate	0.032 ***		0.029 ***		0.026 ***	
Se	0.006		0.006		0.006	
					0.007	
					0.009	
Mean	4.102					

*Notes.* The partial effects shown in the table calculated on the basis of the coefficients in Table A.18. All percentiles are calculated as the mean over five observations in accordance with the micro data policy of Statistics Denmark.

## Part V: Liquidity constraints and personality

**Table A.20: Table 2 including a dummy for the respondent finding it “difficult to control own expenses”**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained	0.0188*** (0.0063)	0.0263*** (0.0062)	0.0251*** (0.0062)	0.0286*** (0.0062)	0.0240*** (0.0062)	0.0289*** (0.0062)	0.0266*** (0.0062)
Permanent income (DKK 100,000)		-0.0160*** (0.0021)		-0.0174*** (0.0021)		-0.0164*** (0.0021)	-0.0153*** (0.0021)
Home equity (DKK 100,000)	-0.0018*** (0.0003)	-0.0010*** (0.0003)					-0.0010*** (0.0003)
Skill Specificity			0.0003 (0.0005)	0.0007 (0.0004)			0.0007** (0.0003)
Unemployment risk (%)					0.0007*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)
Difficult to control expenses	0.0191 (0.0128)	0.0170 (0.0127)	0.0216* (0.0128)	0.0177 (0.0127)	0.0164 (0.0128)	0.0160 (0.0126)	0.0154 (0.0126)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0075	0.0554	0.0029	0.0544	0.0099	0.0572	0.0586

*Notes.* The table reports coefficients from OLS regressions of respondents’ attitudes to social insurance on a dummy for being liquidity constrained and a dummy for the respondent finding it “difficult to control own expenses”, in addition to the controls and variables included in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.21: Table A.2 including a dummy for the respondent finding it “difficult to control own expenses”**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Liquidity constrained	0.0152** (0.0062)	0.0221*** (0.0061)	0.0218*** (0.0061)	0.0248*** (0.0061)	0.0216*** (0.0061)	0.0250*** (0.0061)	0.0222*** (0.0061)
Permanent income (DKK 100,000)		-0.0130*** (0.0021)		-0.0143*** (0.0021)		-0.0141*** (0.0021)	-0.0126*** (0.0021)
Home equity (DKK 100,000)	-0.0019*** (0.0003)	-0.0012*** (0.0003)					-0.0012*** (0.0003)
Skill Specificity			-0.0012** (0.0005)	-0.0008 (0.0005)			-0.0007 (0.0006)
Unemployment risk (%)					0.0003** (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)
Difficult to control expenses	0.0328*** (0.0114)	0.0337*** (0.0113)	0.0354*** (0.0114)	0.0344*** (0.0113)	0.0337*** (0.0115)	0.0339*** (0.0113)	0.0331*** (0.0113)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	8,035	8,035	8,035	8,035	8,035	8,035	8,035
R-squared	0.0087	0.0737	0.0040	0.0723	0.0042	0.0723	0.0743

*Notes.* The table reports coefficients from OLS regressions of respondents’ attitudes to redistribution on a dummy for being liquidity constrained and a dummy for the respondent finding it “difficult to control own expenses”, in addition to the controls and variables included in Table 1 in the paper. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.



The following two tables show the results from table 2 and table A.2 controlling for personality measures.

About the personality measures: Respondents answer the following: “I see myself as someone who (1) is reserved (E-R); (2) is generally trusting (A); (3) tends to be somewhat lazy (C-R); (4) is relaxed, handles stress well (N-R); (5) has few artistic interests (O-R); (6) is outgoing, sociable (E); (7) tends to find fault with others (A-R); (8) does a thorough job (C); (9) gets nervous easily (N); (10) has an active imagination (O)’ on a 1-5 scale from strongly disagree to strongly agree. The letters OCEAN refer to each of the traits, and each is gauged by a positive and a reverse, marked R, statement. In the regression analysis, we construct five personality trait dummies, one for each trait (Openness, Conscientiousness, Extroversion, Agreeableness and Neuroticism), running on a scale from 1 to 5, where 5 indicates a high level of the particular trait. Respondents’ replies to the personality trait questions are from the survey of 2013, where these questions were for the first time included in the questionnaire. Hence, the analysis on liquidity constraints and personality traits only include people who participated in the 2013 survey round.

**Table A.22: Table 2 including dummies for “Big five” personality traits**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
VARIABLES	More UI	More UI	More UI	More UI	More UI	More UI	More UI
Liquidity constrained	0.0149* (0.0081)	0.0222*** (0.0080)	0.0217*** (0.0080)	0.0246*** (0.0080)	0.0204** (0.0080)	0.0246*** (0.0080)	0.0224*** (0.0080)
Permanent income (DKK 100,000)		-0.0158*** (0.0027)		-0.0172*** (0.0027)		-0.0164*** (0.0027)	-0.0154*** (0.0027)
Home equity (DKK 100,000)	-0.0019*** (0.0004)	-0.0010*** (0.0004)					-0.0010*** (0.0004)
Skill Specificity			0.0009*** (0.0002)	0.0012*** (0.0001)			0.0011*** (0.0001)
Unemployment risk (%)					0.0006*** (0.0001)	0.0004*** (0.0001)	0.0004*** (0.0001)
Extraversion	-0.0012 (0.0043)	0.0002 (0.0042)	-0.0006 (0.0043)	0.0002 (0.0042)	-0.0006 (0.0043)	0.0002 (0.0042)	0.0002 (0.0042)
Agreeableness	0.0155*** (0.0054)	0.0099* (0.0053)	0.0152*** (0.0054)	0.0098* (0.0053)	0.0154*** (0.0054)	0.0097* (0.0053)	0.0100* (0.0053)
Openness	0.0255*** (0.0040)	0.0218*** (0.0040)	0.0260*** (0.0040)	0.0222*** (0.0040)	0.0249*** (0.0040)	0.0217*** (0.0040)	0.0213*** (0.0040)
Neuroticism	0.0169*** (0.0043)	0.0097** (0.0043)	0.0171*** (0.0044)	0.0091** (0.0044)	0.0158*** (0.0044)	0.0088** (0.0043)	0.0090** (0.0043)
Conscientiousness	-0.0079* (0.0045)	-0.0061 (0.0044)	-0.0082* (0.0045)	-0.0061 (0.0044)	-0.0071 (0.0045)	-0.0057 (0.0044)	-0.0055 (0.0044)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	4,792	4,792	4,792	4,792	4,792	4,792	4,792
R-squared	0.0216	0.0718	0.0165	0.0710	0.0209	0.0723	0.0740

*Notes.* The table reports coefficients from OLS regressions of respondents’ attitudes to social insurance on a dummy for being liquidity constrained and dummies for each of the Big Five personality traits (Gosling et al. (2003) 10-item measures), in addition to the controls and variables included in Table 1 in the paper. Personality variables run from 1-5, where 5 indicates a high level of the particular trait. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

**Table A.23: Table A.2 including dummies for “Big five” personality traits**

VARIABLES	(1) More redistribution	(2) More redistribution	(3) More redistribution	(4) More redistribution	(5) More redistribution	(6) More redistribution	(7) More redistribution
Liquidity constrained	0.0186** (0.0079)	0.0260*** (0.0078)	0.0255*** (0.0078)	0.0286*** (0.0077)	0.0253*** (0.0078)	0.0287*** (0.0077)	0.0260*** (0.0078)
Permanent income (DKK 100,000)		-0.0105*** (0.0026)		-0.0117*** (0.0026)		-0.0117*** (0.0026)	-0.0100*** (0.0026)
Home equity (DKK 100,000)	-0.0020*** (0.0004)	-0.0012*** (0.0004)					-0.0012*** (0.0004)
Skill Specificity			-0.0019*** (0.0003)	-0.0015*** (0.0001)			-0.0016*** (0.0001)
Unemployment risk (%)					0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0001)
Extraversion	0.0052 (0.0042)	0.0062 (0.0041)	0.0057 (0.0042)	0.0062 (0.0041)	0.0058 (0.0042)	0.0063 (0.0041)	0.0062 (0.0041)
Agreeableness	0.0247*** (0.0055)	0.0162*** (0.0054)	0.0239*** (0.0055)	0.0158*** (0.0054)	0.0243*** (0.0055)	0.0160*** (0.0054)	0.0160*** (0.0054)
Openness	0.0180*** (0.0040)	0.0132*** (0.0039)	0.0185*** (0.0040)	0.0137*** (0.0039)	0.0182*** (0.0040)	0.0134*** (0.0039)	0.0130*** (0.0039)
Neuroticism	0.0179*** (0.0043)	0.0125*** (0.0042)	0.0183*** (0.0043)	0.0123*** (0.0042)	0.0177*** (0.0043)	0.0119*** (0.0042)	0.0125*** (0.0042)
Conscientiousness	-0.0066 (0.0045)	-0.0050 (0.0044)	-0.0070 (0.0045)	-0.0052 (0.0044)	-0.0066 (0.0045)	-0.0049 (0.0044)	-0.0048 (0.0044)
<b>Controls</b>							
<i>Labor Market</i>		✓		✓		✓	✓
<i>Demographics</i>		✓		✓		✓	✓
<i>Attitudinal</i>		✓		✓		✓	✓
Observations	4,792	4,792	4,792	4,792	4,792	4,792	4,792
R-squared	0.0224	0.0916	0.0177	0.0906	0.0167	0.0901	0.0929

*Notes.* The table reports coefficients from OLS regressions of respondents’ attitudes to redistribution on a dummy for being liquidity constrained and dummies for each of the Big Five personality traits (Gosling et al. (2003) 10-item measures), in addition to the controls and variables included in Table 1 in the paper. Personality variables run from 1-5, where 5 indicates a high level of the particular trait. All models include a constant term and dummies for the survey years. Robust standard errors in parentheses. \*\*\*, \*\*, and \* indicate significance at the 1, 5, and 10% levels.

## Part VII: Summary statistics

**Table A.24: Summary statistics**

Variable	Mean	Median
<i>Demographics</i>		
Age	44.88	45.00
Woman (d)	0.50	1.00
Single (d)	0.22	0.00
Immigrant (d)	0.05	0.00
Children (d)	0.53	1.00
Homeowner (d)	0.66	1.00
Basic education (d)	0.21	0.00
Short education (d)	0.43	0.00
Medium education (d)	0.24	0.00
Long education (d)	0.12	0.00
<i>Labor market</i>		
Perceived unemployment risk (%)	17.22	1.00
Self-employed (d)	0.06	0.00
Full insurance (d)	0.83	1.00
<i>Income and balance sheets</i>		
Income (DKK)	391,097.20	362,392.50
Disposable income (DKK)	284,335.30	272,169.40
Permanent income (DKK)	360,385.10	331,686.90
Total assets (DKK)	1,141,892.00	806,682.00
Liquid assets (DKK)	159,285.30	47,244.05
Bank assets (DKK)	114,788.90	37,628.22
Stocks (DKK)	26,647.88	0.00
Bonds (DKK)	17,848.54	0.00
Assets/disposable income	0.99	0.18
Constrained (d)	0.42	0.00
Housing wealth (DKK)	960,084.10	699,785.50
Home equity (DKK)	410,169.10	17,299.05
Positive home equity (d)	0.51	1.00
Negative home equity (d)	0.15	0.00
Total debt (DKK)	753,952.40	563,432.20
Mortgage debt (DKK)	567,105.60	405,629.20
Bank debt (DKK)	180,190.10	77,498.19
<i>Survey years</i>		
Survey 2010 (d)	0.62	1.00
Survey 2011 (d)	0.16	0.00
Survey 2012 (d)	0.11	0.00
Survey 2013 (d)	0.11	0.00
<i>Numer of observations</i>	8,035	8,035

Based on our sample of 8,035 respondents. Medians are calculated as an average over 5 observations in accordance with Statistics Denmark's micro data policy. Min and max are not reported for confidentiality reasons. (d) indicates that the variable is a dummy.

**References**

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